

Docket No. F-9098

Ser. No. 10/590,176

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) A turning device for a heavy object comprising:

a turning arm joined to the heavy object, said turning arm being turnable around ~~[[a]]~~ an axial line of a turning pivot of the turning arm, said heavy object having a width extended along the axial line of the turning pivot on an axial line; and

a drive device for driving a turning operation of the turning arm, the drive device including:-

~~_____ a fixing section;~~

~~_____ a rotation input section;~~

~~_____ a rotation output section having a plane orthogonal to the axial line of the turning pivot;~~

a planetary gear type reducer comprising a fixing section, a rotation input section, and a rotation output section having a plane orthogonal to the axial line of the turning pivot, said planetary gear type reducer including a pair of ball bearings each having bearing contact angle to a line perpendicular to the

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axial line, said ball bearings being disposed between the fixing section and the rotation output section; and

a motor including a rotor shaft coaxially connected to a stator having a coil and to the rotation input section, the turning arm having a first plane connected to the plane of the rotation output section and a second plane connected to the heavy object, said second plane being positioned nearer to the heavy object than the axial line of the turning pivot and oriented orthogonal to the first plane, and the turning arm and the drive device being disposed entirely within [[a]] said width of the heavy object in the axial direction of the turning pivot.

2. (Currently amended) The turning device for a heavy object according to claim 1 wherein:

an axial center of the turning pivot is positioned within a distance, said distance extending between one of the pair of ball bearings[[,]] which is positioned on ~~the orthogonal plane~~ a side of the rotation output section proximal to said first plane[[,]] and an intersection obtained by crossing the axial line of the turning pivot with a line at [[a]] said bearing contact angle to a perpendicular line of the one of the pair of ball bearing bearings.

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3. (Currently amended) The turning device for a heavy object according to claim 1 wherein:

a previous-stage speed reducer as a previous-stage reduction gear mechanism is disposed between the planetary gear type speed reducer and the motor;

an input rotation section of the previous-stage speed reducer and the rotor shaft of the motor are coaxially coupled to each other; and

[[the]] an output rotation section of the previous-stage speed reducer and the input rotation section of the planetary gear type speed reducer are coaxially coupled to each other.

4. (Currently amended) The turning device for a heavy object according to claim 1, wherein:

a supporting block for fixing the planetary gear type speed reducer and a frame for mounting the supporting block are provided;

the fixing section for the drive device or the planetary gear type speed reducer having a mounting flat surface parallel to the plane of the rotation output section which includes a circular outside-diameter section;

the supporting block includes a first mounting surface for mounting the mounting flat surface of the fixing section of the planetary gear type speed

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reducer, a second mounting surface for mounting the frame and orthogonal to the first mounting surface, and a pair of rib sections for connecting outer ends of the first mounting surface with corresponding outer ends of the second mounting surface; and

the outside-diameter section of the mounting flat surface of the fixing section of the planetary gear type speed reducer is cut so that a side of the pair of ~~[[ribs]]~~ rib sections may be shorter than a circular outside diameter of said outside-diameter section.

5. (Currently amended) A turning device for a heavy object comprising:

a turning arm joined to the heavy object and turning around ~~[[a]]~~ an axial line of a turning pivot of the turning arm, said heavy object having a width extended along the axial line of the turning pivot on an axial line; and

a drive device for driving a turning operation of the turning arm, the drive device including:

~~_____ a fixing section;~~

~~_____ a rotation input section;~~

~~_____ a rotation output section having a plane orthogonal to the axial line of the turning pivot;~~

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a planetary gear type reducer comprising a fixing section, a rotation input section, and a rotation output section having a plane orthogonal to the axial line of the turning pivot, said planetary gear type reducer having a pair of ball bearings each having bearing contact angle to a line perpendicular to the axial line, said ball bearings being disposed between the fixing section and the rotation output section; and

a motor disposed coaxially to the rotation input section, the turning arm having a first plane joined to the plane of the rotation output section and a second plane orthogonal to the first plane, the turning arm and the drive device being disposed entirely within ~~[[a]]~~ said width of the heavy object ~~in the axial direction of the turning pivot.~~